

APPENDIX A
LAKE CHARACTERISTICS
&
AQUATIC PLANT SURVEY MAPS

Introduction Table A-1 is a summary of general lake information and plant management history for all 38 lakes surveyed. This table is followed by 18 maps. The first four maps display regional information: the first depicts the location of all the King County lakes surveyed, the second depicts those surveyed that contained milfoil, the third depicts where loosestrife (another invasive plant problem) was observed in Lakes Washington and Sammamish, and the fourth depicts Chinook Salmon use areas. These last two of the regional maps have been included because this information may be useful in the IAVMP planning process.

The four regional maps are followed by maps of each of the 14 lakes where milfoil was observed. These maps are provided in alphabetical order. The maps indicate where milfoil was found in the lake and the extent of the population. Only one level of infestation is indicated per lake, so areas within each lake that might have other densities of the plant were not differentiated.

Table A-1. Summary of King County Lake Characteristics and Plant Management History.

Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Lake Alice	Raging River	King County	33	No	Not Immediately Available
Angle Lake	Green River	City of Seatac	102	No	Not Immediately Available
Bass Lake	Green River	King County	24	Yes	Not Immediately Available
Beaver Lake	Lake Sammamish	City of Sammamish	63	No	DOE has denied herbicide treatment requests by residents to target non-native water lily growth. There is active citizen lake monitoring.
Boren Lake	May	City of Newcastle	15	No	Not Immediately Available
Cottage Lake	Bear	King County	63	No	Not Immediately Available
Desire Lake	Cedar River	King County	72	Yes	Not Immediately Available. Small population of plants.
Dolloff Lake	Mill Creek	King County	21	No	Not Immediately Available
Fenwick Lake	Green River	City of Kent	18	No	An extensive infestation of Brazilian Elodea (<i>Egeria densa</i>), another invasive noxious weed, dominates the littoral zone. An IAVMP was submitted to Ecology in 2000 and approved.
Fivemile Lake	White River	King County	38	No	Not Immediately Available
Lake Geneva	Mill Creek	King County	29	No	Selective treatments were made in the 1980s to reduce the population of non-native water lily. The water lily communities have re-colonized much of the lake shoreline. This species of water lily (<i>Nymphaea odorata</i>) is on the 2002 state noxious weed list.
Lake Jeane	Lower Puget Sound	City of Federal Way	15	No	Management activities by the Twin Lake Golf and County Club have included regular inspections of the lake by a commercial applicator, treatment with contact and systemic herbicide for suppression of problem aquatic weed growth, and spot treatment for filamentous algae growth. The community has also undertaken water quality monitoring and is considering an aeration system.

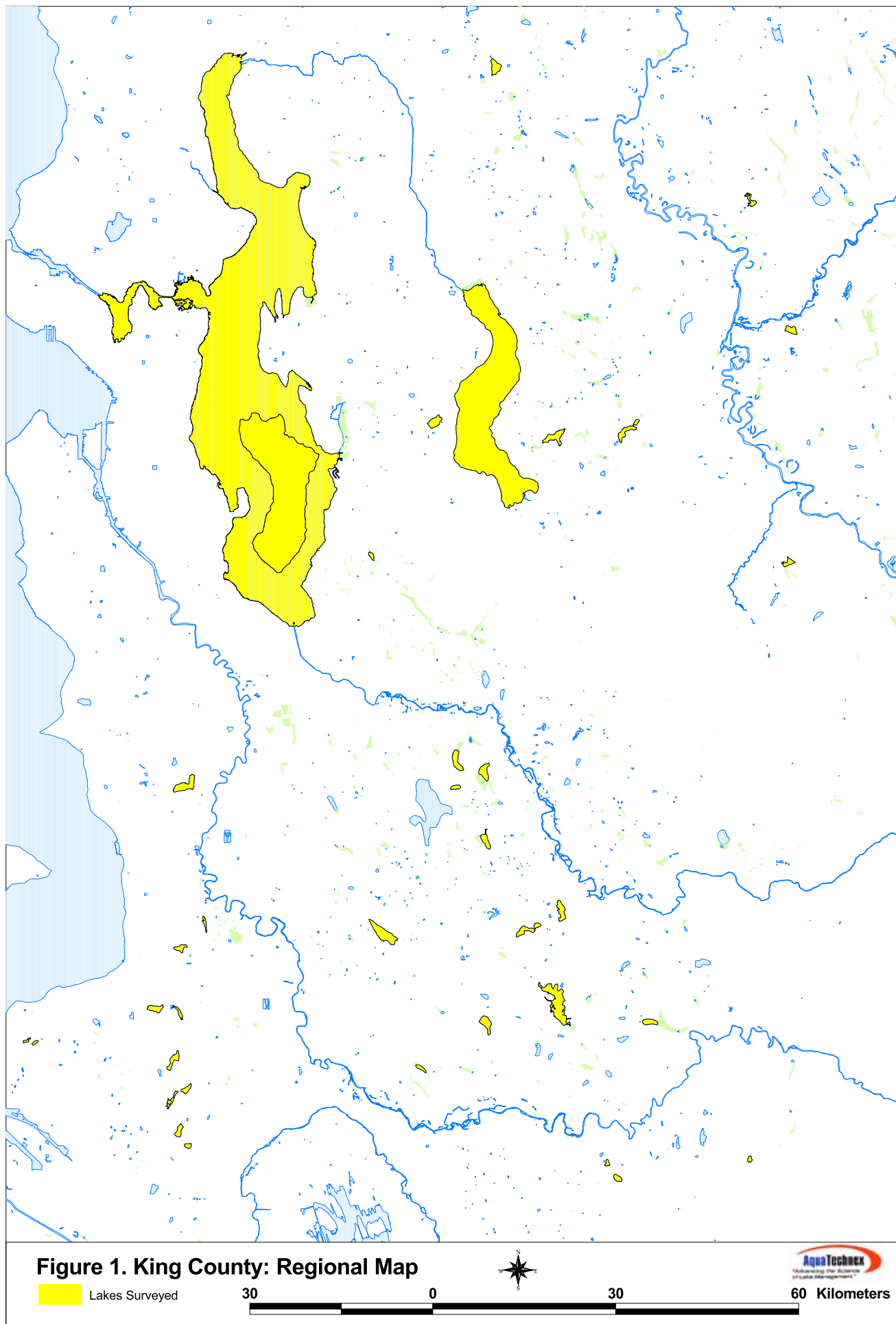
Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Lake Killarney	Hylebos	King County	31	No	In the mid 1980s, Lake Killarney was heavily infested with Eurasian milfoil. The lake residents formed a milfoil committee in 1986 and obtained the necessary permits to treat the lake in 1987. A treatment with Sonar aquatic herbicide eradicated the Eurasian milfoil during that year. In each of the following years, licensed applicators have inspected and treated problematic weed growth. In the early 1990s the lake community worked with King County to develop a Lake Management Plan.
Langlois Lake	Tolt River	King County	40	No	Not Immediately Available
Lake Lorene	Lower Puget Sound	City of Federal Way	15	No	Management activities by the Twin Lakes Homeowners Association have included regular inspections of the lake by a commercial applicator, treatment with contact and systemic herbicide for suppression of problem aquatic weed growth, and spot treatment for filamentous algae growth. The community has also undertaken water quality monitoring and is considering an aeration system for this urban lake.
Lake Lucerne	Jenkins Creek	City of Maple Valley	23	No	Along with Pipe Lake which is directly connected to Lucerne, this lake system has been undergoing intensive control efforts targeting the invasive aquatic weed <i>Hydrilla</i> . A tjrovomg [p[I;atopm was discovered in the lake during a 1994 King County survey program. At that time, Eurasian milfoil was also present in great quantities. In 1995 King County and DOE instituted an eradication effort that continues to the present. The first four years of this program utilized Sonar aquatic herbicide. Eurasian milfoil was eradicated by the Sonar treatment in 1995. <i>Hydrilla</i> tubers continue to sprout from the lake sediments and eradication has not yet been achieved.

Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Marcel Lake	Harris Creek	King County	19	No	During the 1980s the lake association regularly hired licensed applicators to treat submerged weed growth with aquatic herbicides. Marcel Lake was one of the first private lakes to get a permit for grass carp stocking as a biological control agent. The community has relied on biocontrol for aquatic plant management since that time.
Meridian Lake	Soos Creek	City of Kent	150	Yes	This lake is heavily impacted with Eurasian milfoil. An IAVMP was developed in 2000 and submitted to Ecology and approved.
Morton Lake	Covington	King County	66	No	Not Immediately Available
Neilson Lake	Green River	King County	19	Yes	No plant management history. This lake was observed to have pioneering infestations of Eurasian milfoil in 2001.
North Lake	Hylebos Creek	King County	55	No	There have been a number of permit applications made to DOE for the control of water lilies and submerged plants in the 1990s. It is not known what work was performed. The shoreline is heavily impacted with the noxious emergent weed Purple Loosestrife. This plant dominates the wetland areas on the west shoreline and is present in some yards along the east shoreline.
Phantom Lake	West Lake Sammamish	City of Bellevue	63	Yes	In addition to being heavily infested with Eurasian milfoil, there are colonies of Purple Loosestrife well established around the lake perimeter and in the adjacent wetlands.
Pine Lake	East Lake Sammamish	City of Sammamish	88	No	Not Immediately Available
Pipe Lake	Jenkins Creek	City of Maple Valley and Covington	51	No	Along with Lake Lucerne, which is directly connected to Pipe Lake, this lake system has been undergoing intensive control efforts targeting the invasive aquatic weed Hydrilla. See discussion of Lake Lucerne for history.
Sammamish Lake	Sammamish	Multiple Jurisdictions	4,893	Yes	This lake is heavily infested with Eurasian Milfoil despite efforts to eradicate the plant since the 1970s. Areas of Lake Sammamish around the State Park participated in the METRO harvesting program. There have also been some permits issued for the management of Eurasian milfoil for various homeowner associations on the lake.

Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Sawyer Lake	Covington Creek	City of Black Diamond	279	Yes	No plant management history. This lake is heavily impacted by Eurasian milfoil.
Shadow Lake	Jenkins Creek	King County	50	Yes	Not Immediately Available. Populations of milfoil appear to be relatively small.
Shady Lake	Cedar River	King County	21	Yes	No plant management history. There are pioneering colonies of Eurasian milfoil in this lake.
Spring Lake	Cedar River	King County	68	Yes	No plant management history. This lake is moderately infested with Eurasian milfoil.
Star Lake	Green River	King County	34	No	This lake historically has had a major infestation of Eurasian milfoil. Residents formed a milfoil committee in the late 1990s to study control options. In 2000, they raised funding from homeowners and hired a licensed applicator to treat the lake with Sonar aquatic herbicide. Diver surveys in the summer of 2000 and 2001 show no milfoil present in this system. At this point, Eurasian milfoil has been eradicated from Star Lake.
Steel Lake	Lower Puget Sound	City of Federal Way	46	Yes	Pioneering colonies of Eurasian milfoil were found in Steel Lake in 2001. This lake was heavily impacted with Eurasian milfoil and non-native white water lily in the 1980s. Residents formed a lake management committee to selectively remove some water lily growth in 1989 and 90. They also helped the City of Federal Way obtain funding from DOE to eradicate Eurasian milfoil. A Sonar aquatic herbicide treatment was made in 1993 and the lake has been surveyed a number of times since showing no presence of Eurasian milfoil until the 2001 survey. The lake was treated with 2,4-D in 2002. Results are as yet unknown.
Trout Lake	White River	King County	18	No	Not Immediately Available

Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Lake Twelve	Cedar River	King County	43	Yes	This lake has been the subject of intensive study and control efforts for milfoil. An IAVMP was developed in the 1990s. A Sonar aquatic herbicide treatment was performed in the mid 1990s. Diver surveys for two years after the treatment showed the lake to be free of Eurasian milfoil. The third year found some pioneering colonies present near the boat ramp and the west shoreline. These were mapped and hand picked. This weed has since expanded back to the point of pre-treatment. The littoral zone is heavily impacted with Eurasian milfoil.
Lake Union	Lake Washington	City of Seattle	598	Yes	No plant management history. The littoral zone is moderately impacted with Eurasian milfoil.
Walker Lake	Coal Creek	King County	12	No	Not Immediately Available
Lake Washington	Lake Washington	Multiple Jurisdictions	22,138	Yes	There is a long history of aquatic plant management in this lake. METRO pioneered Eurasian milfoil control efforts in this lake in the early 1980s using aquatic weed harvesters. They also funded research and other non-chemical milfoil control efforts in the region. METRO switched to a contract harvest program in 1985. The City of Seattle Parks Department has an ongoing program to treat the beaches they manage with diver removal and bottom barriers and harvest high use areas. Many eastside jurisdictions have utilized aquatic herbicides to treat Eurasian milfoil. Groups on Mercer Island, Newport Shores and Hunts Point have treated with herbicides in a maintenance capacity.

Lake Name	Basin	Jurisdiction	Area (acres)	Milfoil Present	Some History of Plant Management
Lake Wilderness	Jenkins Creek	City of Maple Valley	67	Yes	Lake Wilderness has a long history of Eurasian milfoil infestation. An IAVMP was developed in the mid 1990s. In 1998, the lake was treated with Sonar and Eurasian milfoil was eradicated from the system. Diver surveys each year since have found no milfoil until autumn 2002 when a few plants were found and hand pulled. The citizens formed a Lake Management District that is administered by the City of Maple Valley. Purple Loosestrife was observed at the Public Access. Those plants were hand pulled.



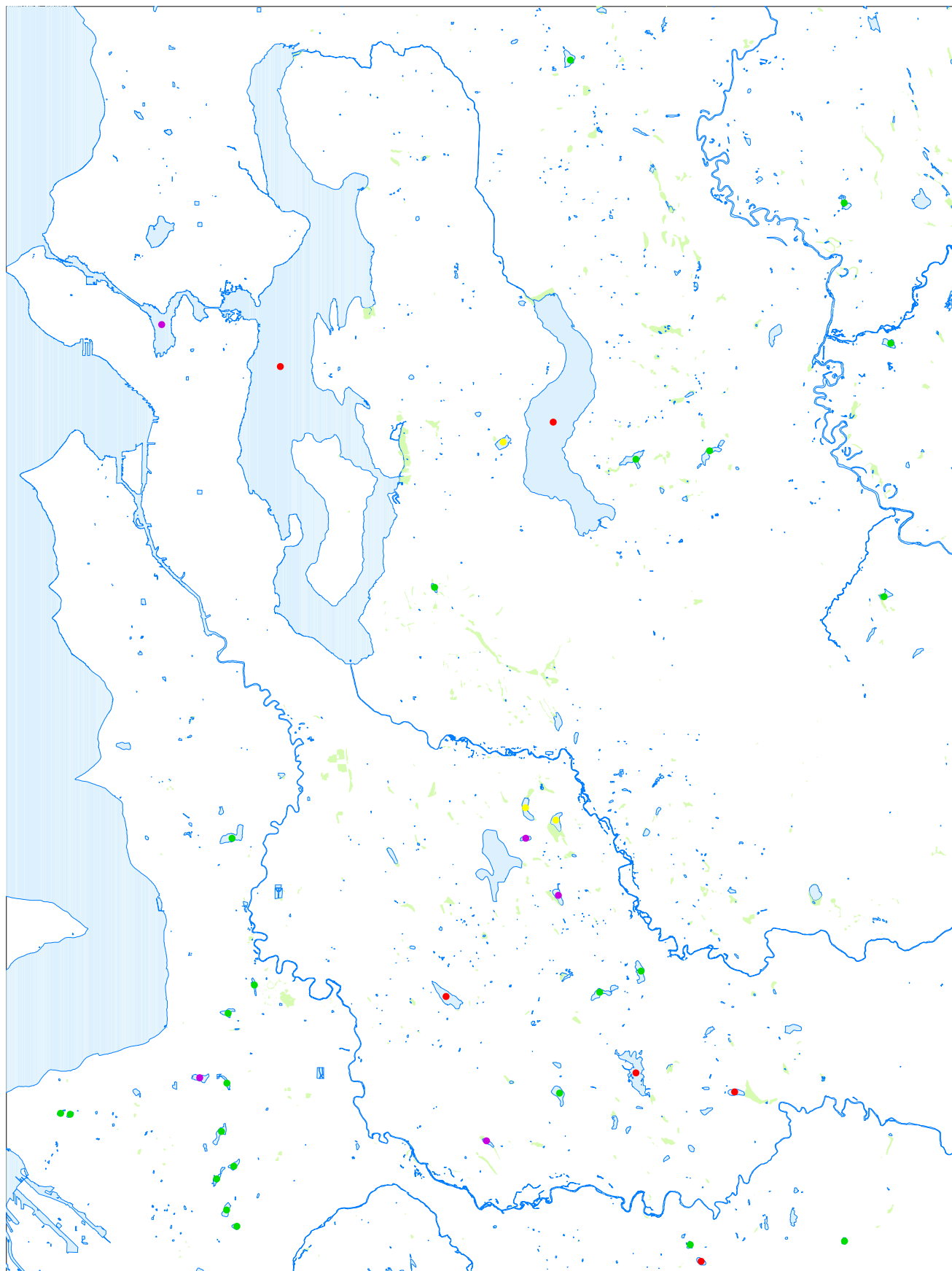
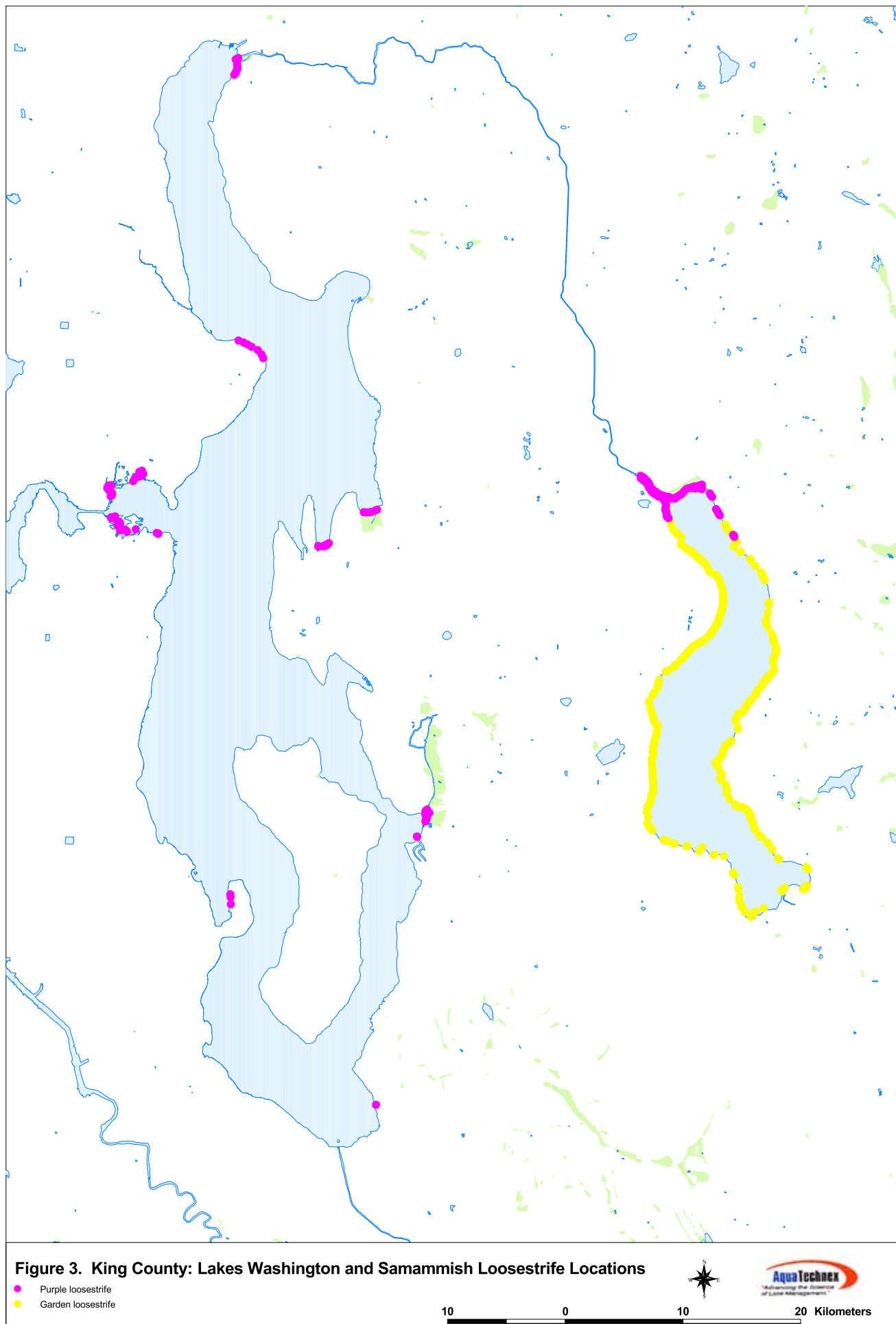


Figure 2. King County Surveyed lakes

- | | |
|-------------------------|-----------------------------------|
| ● EWM established lake | ● EWM pioneering lake |
| ● EWM establishing lake | ● No Eurasian Water Milfoil found |

10 0 10 20 30 Kilometers





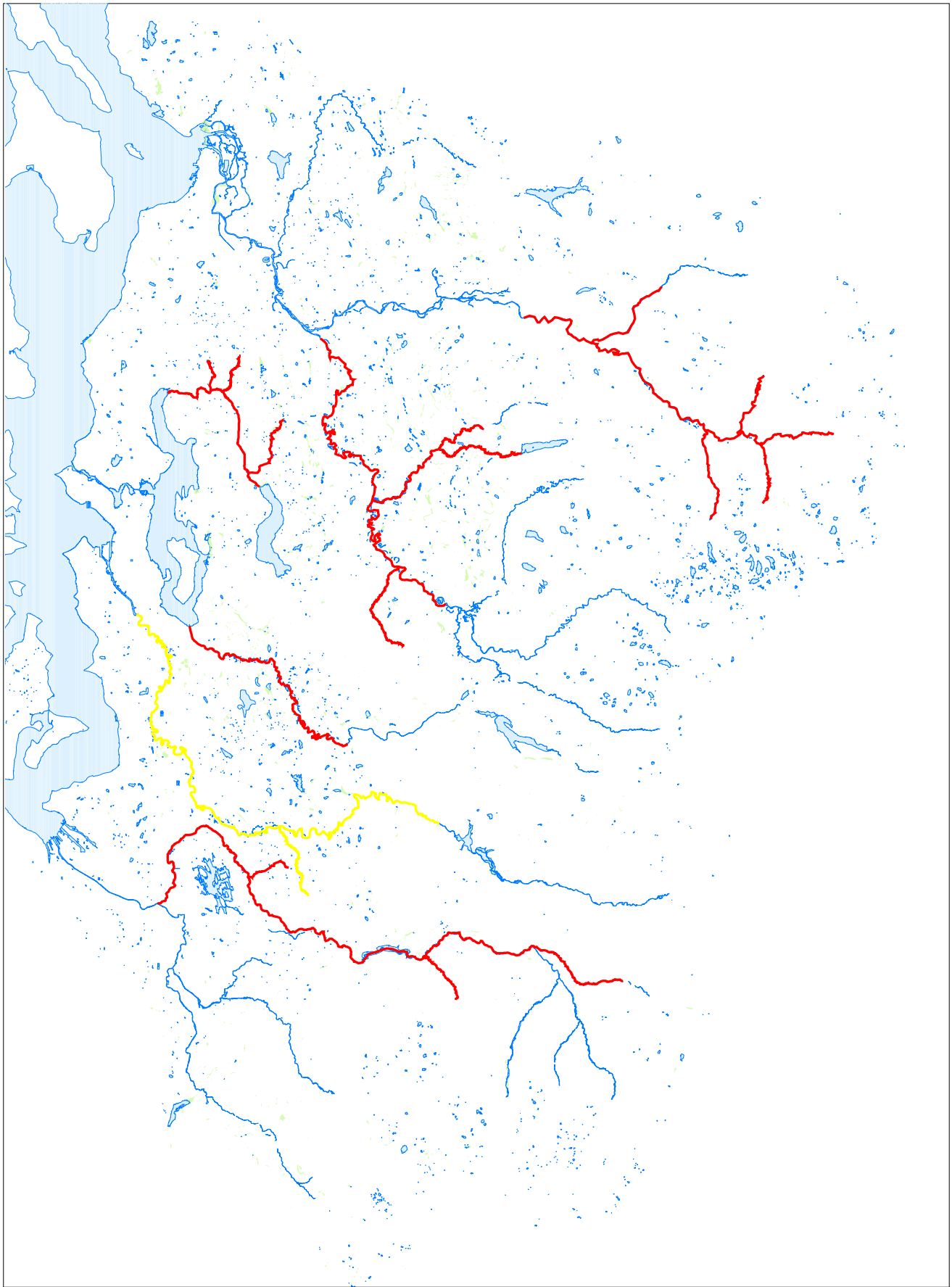


Figure 4. King County: Chinook Salmon Status and Distribution



Critically Depressed Native Chinook River/Stream

Health Chinook River/Stream



90

0

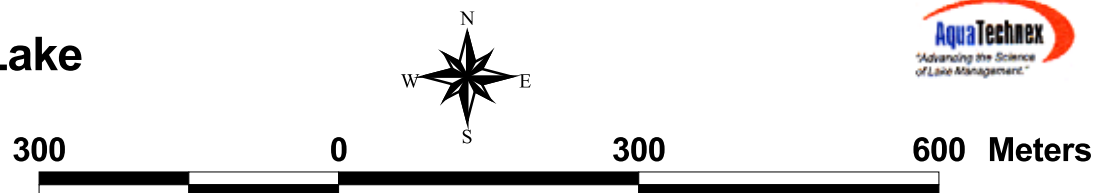
90

180 Kilometers



Figure 5. King County: Bass Lake

- EWM established lake
- Dense Eurasian Water Milfoil



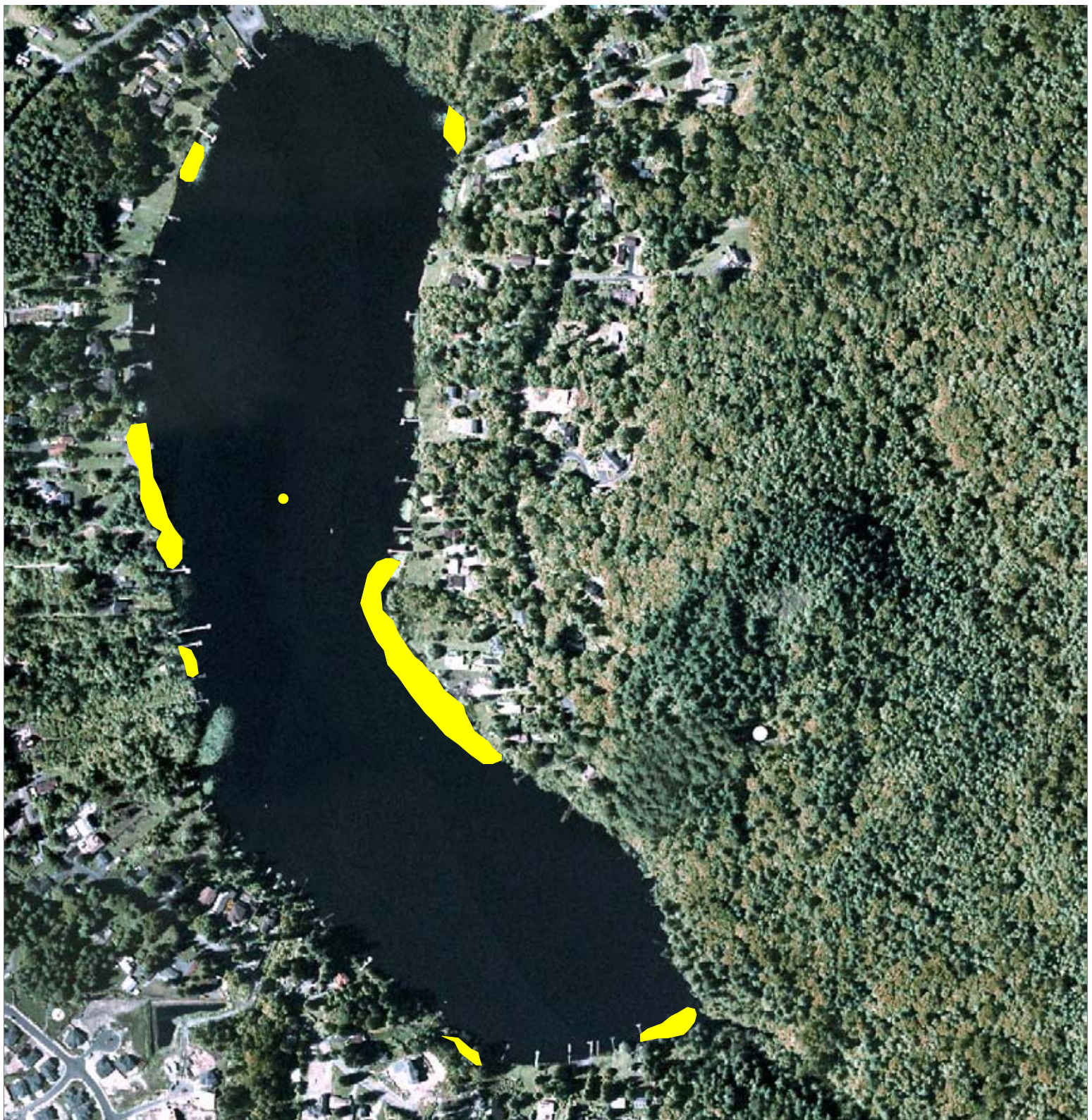


Figure 6. King County: Desire Lake

- EWM establishing lake
- Moderate Eurasian Water Milfoil



800 0 800 1600 Meters



Figure 7. King County: Lake Meridian

- EWM established lake
- Dense Eurasian Water Milfoil

900

0

900

1800 Meters



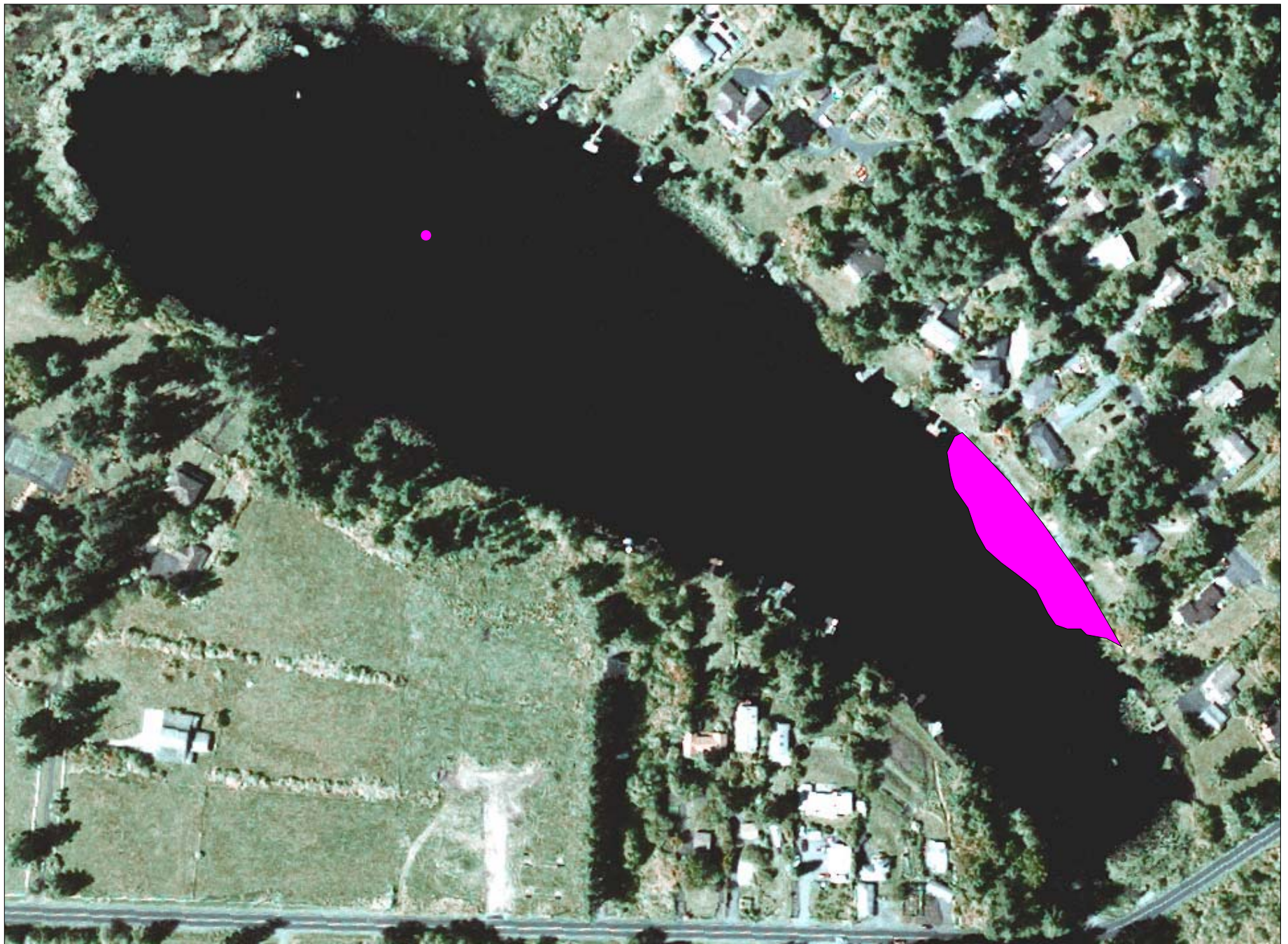


Figure 8. King County: Neilson Lake

- EWM pioneering lake
- Sparse Eurasian Water Milfoil

500



0

AquaTechnex
"Advancing the Science
of Lake Management."

500 Meters

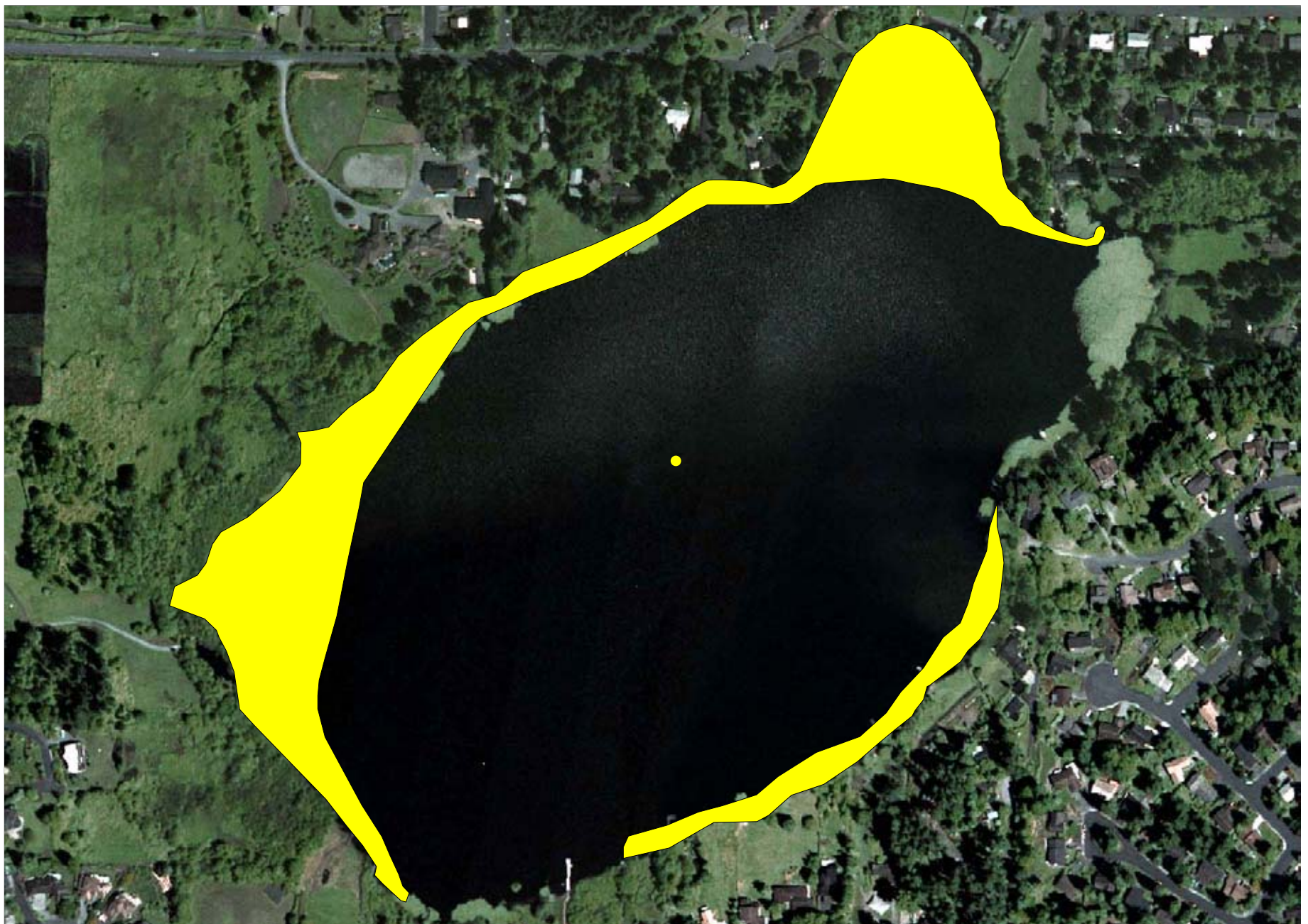


Figure 9. King County: Phantom Lake

- EWM establishing Lake
- Moderate Eurasian Water Milfoil





Figure 10. King County: Lake Sammamish

- EWM established lake
- Dense Eurasian Water Milfoil



9 0 9 18 Kilometers

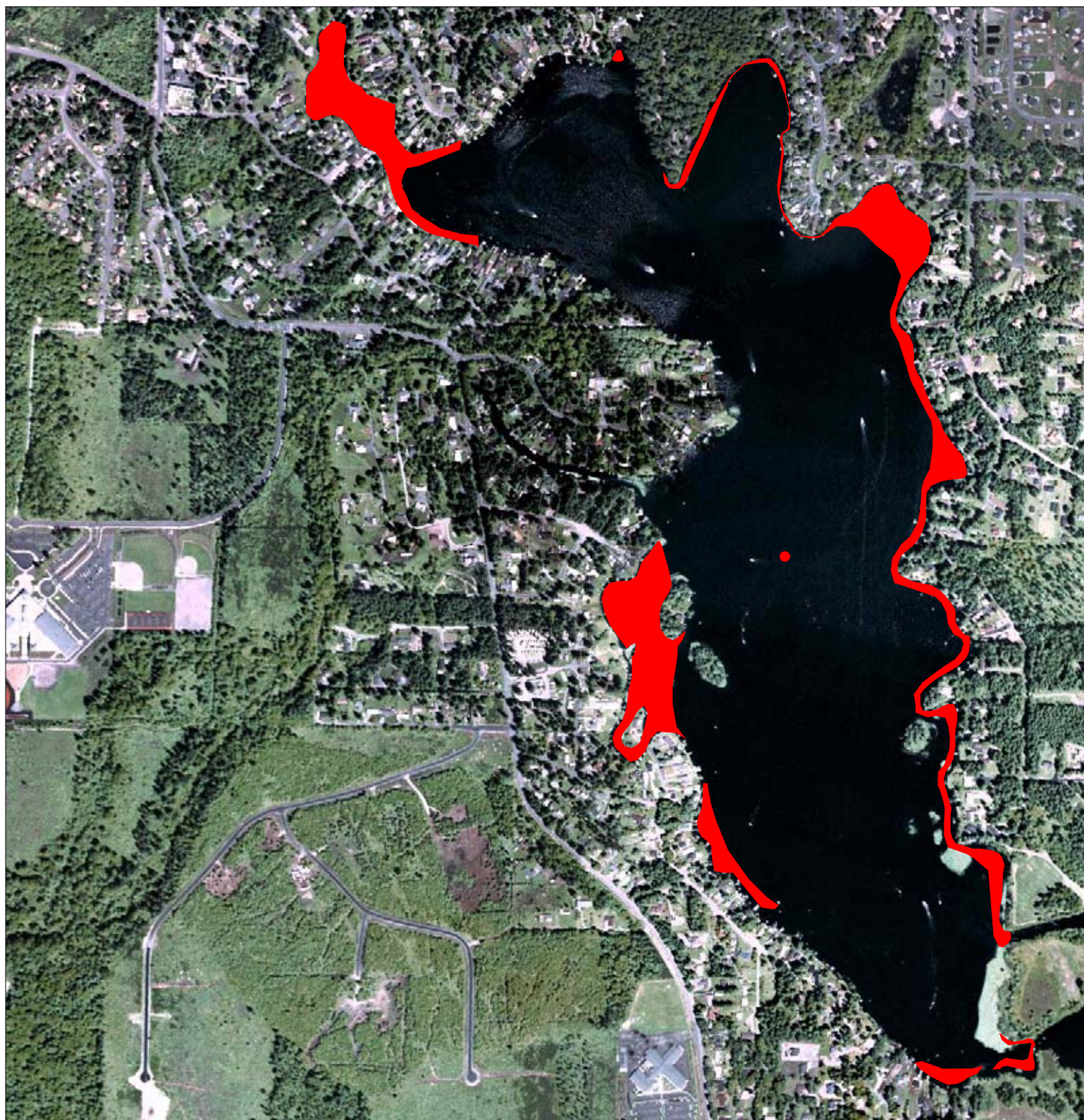


Figure 11. King County: Sawyer Lake

- EWM established lake
- Dense Eurasian Water Milfoil



1 0 1 2 Kilometers



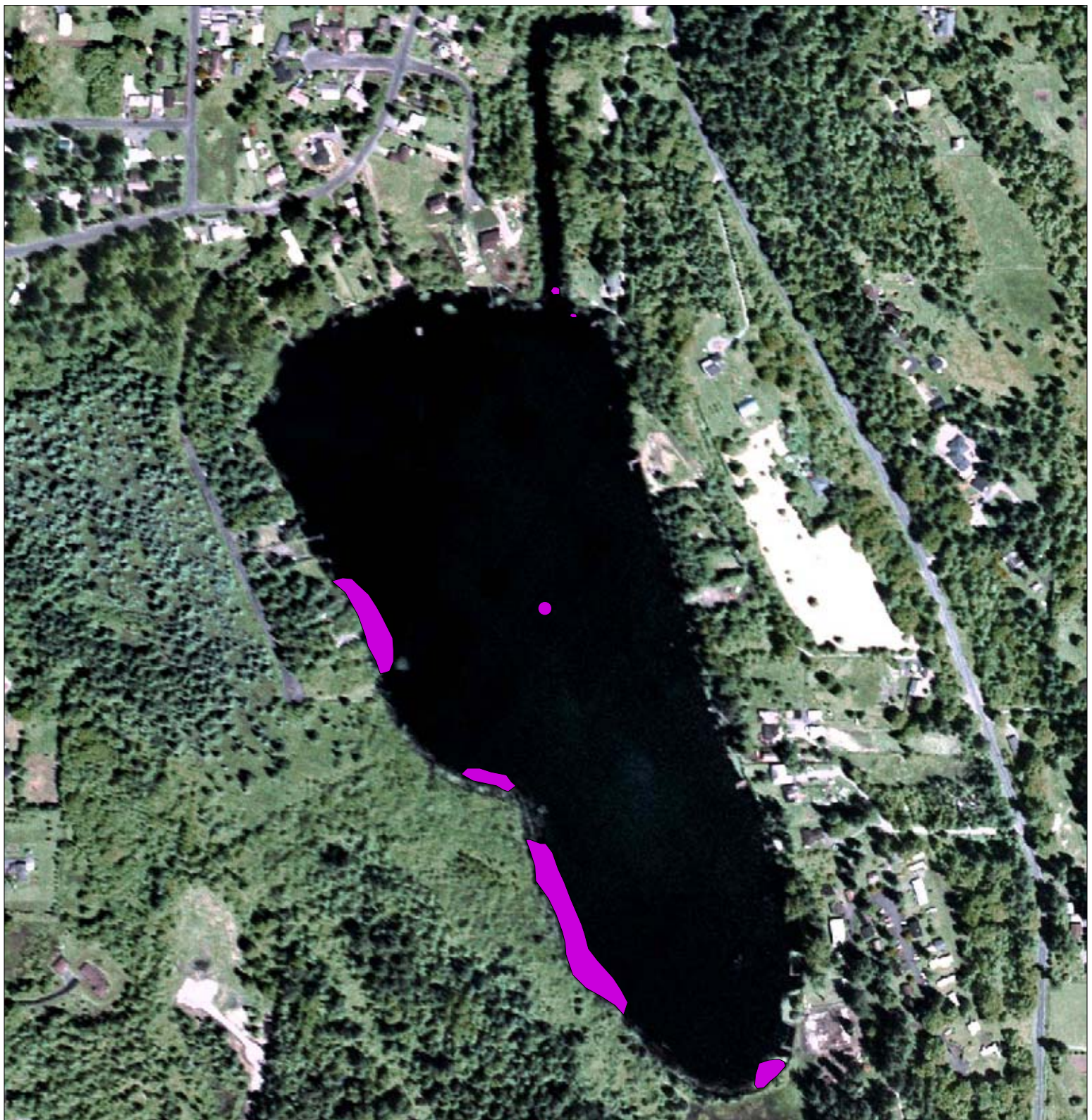




Figure 12. King County: Shadow Lake



-  EWM pioneering Lake
-  Sparse Eurasian Water Milfoil



600 0 600 1200 Meters



Figure 13. King County: Shady Lake

-  EWM pioneering lake
-  Sparse Eurasian Water Milfoil

300

0



300

600 Meters





Figure 14. King County: Spring Lake

-  EWM establishing lake
-  Moderate Eurasian Water Milfoil



700 0 700 1400 Meters

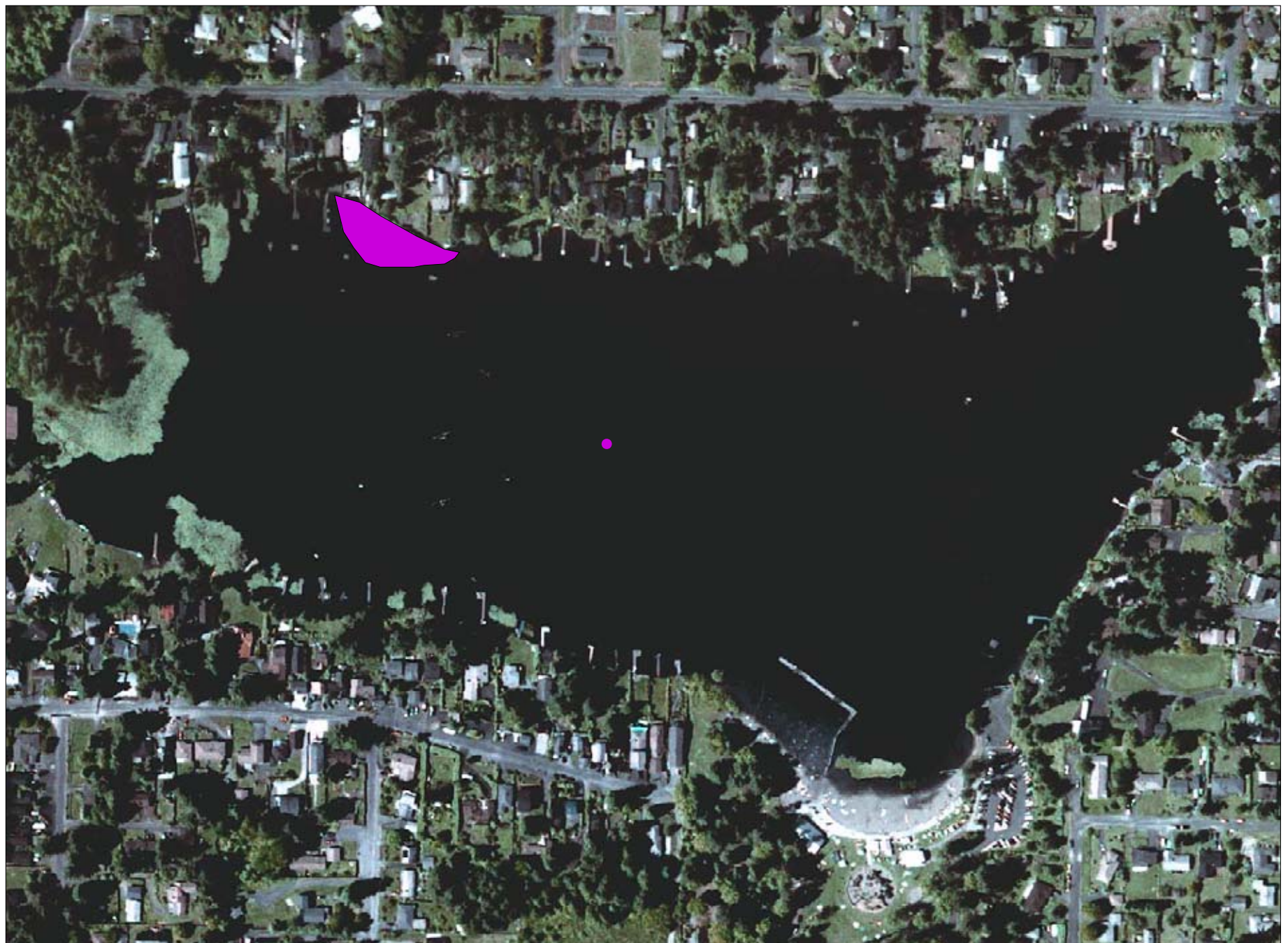


Figure 15. King County: Steel Lake

- Ewm pioneering.shp
- Sparse Eurasian Water Milfoil



500 0 500 1000 Meters





Figure 16. King County: Lake Twelve

- EWM established lake
- Dense Eurasian Water Milfoil





Figure 17. King County: Lake Union

- EWM pioneering Lake
- Dense Eurasian Water Milfoil

3000



0



3000 Meters



Figure 18. King County: Lake Washington

- EWM established lake
- Dense Eurasian Water Milfoil
- Moderate Eurasian Water Milfoil



10 0 10 20 Kilometers

